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ABSTRACT

In recent years, falling immunization rates in the United States have resulted in an increased number of cases of preventable diseases. For example, the United States ranks behind 16 other nations in proportion of infants immunized against polio. Reasons for the decline of immunizations include skyrocketing vaccine costs, rising poverty rates, inadequate access to health care, and underfunding of public health programs. This document reports the results of a national survey of Medicaid programs conducted in 1991. Results indicated that states typically reimburse Medicaid providers for 53 percent of the usual fees for diphtheria, tetanus, and pertussis vaccine, 67 percent for polio vaccine, 72 percent for measles, mumps, and rubella vaccine, and 84 percent for meningitis vaccine. Of the 30 states that use a fee-for-service system, only one pays providers more than 85 percent of usual fees for the four vaccinations. Some states reimburse physicians for immunization services at a rate less than the cost of the vaccine, and some do not reimburse physicians for treating children in follow-up visits. It is recommended that states: (1) reduce vaccine costs by purchasing bulk vaccines from the Centers for Disease Control; (2) implement universal vaccine distribution systems; and (3) provide adequate reimbursement to Medicaid providers. (BC)

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MEDICAID AND CHILDHOOD IMMUNIZATIONS: A NATIONAL STUDY

January, 1992

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Supported by a grant from the Robert Wood Johnson Foundation

Executive Summary and Overview of Key Findings

The Immunization Crisis

One appalling manifestation of the broader crisis in the nation's health care system has been the falling number of children immunized against wholly preventable diseases like polio, measles, mumps, rubella, diphtheria, tetanus, pertussis, and meningitis. Falling immunization rates have inevitably led to more cases of disease and death and disability. The most glaring result has been a three-year long measles epidemic that has claimed over 55,000 Americans, including 89 who died in 1990 alone. Twice as many children contracted pertussis last year than in 1981, and rubella cases stood five times higher than in 1988.

While the rest of the world, including developing nations, has rapidly increased immunization rates, the U.S. has fallen behind. During the 1980s, the proportion of American preschoolers immunized against routine childhood diseases fell to fewer than one-half.

The United States ranks behind 16 other nations in the proportion of infants immunized against polio. When the proportion of U.S. nonwhite infants adequately immunized is compared to other nations' overall rates, the United States ranks 70th in the world, behind Burundi, Indonesia, Cuba, Jamaica, and Trinidad and Tobago.

Key reasons for the U.S. immunization decline have included skyrocketing vaccine costs, rising child and family poverty rates, inadequate access to health care, and underfunding of public health programs.

- Since 1981, the price of a single dose of diphtheria, tetanus, pertussis (DTP) vaccine rose from 33 cents to nearly $10. The price for a dose of polio vaccine quadrupled from $2.10 to $9.45. Measles, mumps, rubella (MMR) vaccine nearly tripled, rising from $9.32 to $25.29.

- In one recent study, 84 percent of pediatricians and 66 percent of family practitioners reported referring at least some of their patients to public clinics for immunizations. The overwhelming majority of these doctors cited the affordability of immunizations both to themselves and their patients as the underlying cause.

- After adjusting for inflation, funding for community health centers fell by 38 percent between 1981 and 1991. With shrinking resources and rising demand for immunization services, 70 percent of all health centers have reported vaccine shortages in their clinics.

Findings of the Study: Medicaid Reimbursement Systems Are Discouraging Providers from Vaccinating Children While Unnecessarily Inflating State and Federal Costs.

In the fall of 1991 the Children's Defense Fund undertook a survey of 49 states and the District of Columbia to determine how well Medicaid programs are providing immunizations. It shows that Medicaid, the nation's safety net health program which should be easing the immunization crisis, instead is worsening the problems. In 1990, nearly one-quarter of all young children, 5.3 million youngsters under age 6, relied on the Medicaid program for health care.

There are two basic price levels for vaccines in this country. The "catalog" price that physicians or other providers pay for vaccines (and then in turn charge to insurance companies or patients) is far higher than the "contract" prices that the federal Centers for Disease Control (CDC) pay for bulk purchase of vaccines they distribute to public clinics. Oral polio vaccine, for example, is $9.45 for private purchase and $2.00 when bulk purchased by CDC.

CDC's contract with vaccine manufacturers allows states to bulk purchase as much vaccine as they want. In theory every state could -- and should -- buy and distribute enough vaccine at least for its Medicaid eligible children, rather than reimbursing physicians to buy vaccine at far higher prices.

But only a minority of states bulk purchase some or all types of vaccine, either for Medicaid recipients or for all children in the state. Thirty states instead continue a fee-for-service reimbursement system in Medicaid. But most of these states, while paying far more than the CDC price for vaccine alone, pay providers an unreasonably low combined amount for vaccines and administration. This led many physicians to discontinue delivering immunizations to Medicaid children.

- States reimburse Medicaid providers only a fraction of the fee typically charged by office-based physicians for immunization services. On average, Medicaid programs pay just 53 percent of usual fees for the diphtheria, tetanus, and pertussis (DTP) vaccine and only 67 percent of usual fees for oral polio vaccine (OPV). Average state Medicaid reimbursements for measles, mumps, and rubella (MMR) and meningitis (HiB) vaccines were 72 and 84 percent of usual fees, respectively.

- In a single office visit for immunizations for a 15-month-old child, the typical Medicaid program underpays doctors by nearly $40. In some states, Medicaid underpays physicians more than $60 compared to usual fee for vaccinations.

- Only one state out of the 30 states that use a fee-for-service vaccine system in Medicaid pays over 85 percent of the usual fee charged by private doctors to immunize children for all four routine vaccines. -- diphtheria, tetanus, and pertussis (DTP); oral polio vaccine (OPV), measles, mumps and rubella (MMR); and haemophilus influenza B (HiB).

- Several states actually reimburse physicians for immunizations services at a rate less than the cost of the vaccine alone. Kentucky's reimbursements for all four routine vaccines fell below the catalog price available to private doctors. Nevada and West Virginia set reimbursements for measles, mumps, and rubella (MMR) and meningitis (HiB) vaccines below cost. And Georgia, Hawaii, Nebraska, Oklahoma, and South Dakota have Medicaid vaccination fees set below the cost of vaccines for at least one antigen.

- When a child needs a followup visit to complete an immunization series, 17 states refuse to pay physicians for the second office visit and only allow billing for the vaccine and administration. The result is that many children never get the additional immunizations they need.

Low Medicaid reimbursement rates for immunization services and the absence of followup visit fees lead to serious problems. Combined with generally depressed reimbursements for other primary care services, insufficient payment for immunization services may push a pediatric provider out of Medicaid completely. More commonly, the low payment levels can lead providers to cease offering immunization services to Medicaid-enrolled children and to routinely refer their patients to public immunization clinics. The result is that Medicaid-covered children get pushed into an already overwhelmed public health system that cannot meet all their needs and safety net health services deteriorate even further for both Medicaid-eligible and other children. As a consequence fewer and fewer children receive protection against preventable disease.

In Milwaukee, 86 percent of the preschool measles cases reviewed by the CDC were among children entitled to Medicaid. Similarly, 60 percent of the cases in Los Angeles, 75 percent of the cases in New York, and 22 percent of the cases in Dallas occurred among children entitled to Medicaid benefits.

Recommendations

All states could solve the problem of high vaccine cost, which in turn drives down the vaccination fee paid to Medicaid providers. They could accomplish this and save money by taking advantage of

the special discounts for bulk purchase vaccine negotiated by the federal Centers for Disease Control. In the past three years, Ohio's Medicaid program has saved $3.3 million by taking advantage of the federal discount prices. Similar savings have been achieved by the other states that purchase and distribute vaccines directly.

Moreover, every state should implement a universal vaccine distribution system to save money and to assure that no child is denied immunizations because a family cannot afford the cost of vaccines. At a minimum state Medicaid agencies should develop vaccine replacement programs to capture vaccine price savings available through the CDC and increase immunization rates. States should invest part of those savings in more adequate reimbursement levels to Medicaid providers for the administration of the free vaccine. Improved reimbursements will stem the tide of children into public immunization clinics and make immunization services more accessible. At a time of exceedingly tight state budgets, states must stop wasting the millions they pay in high vaccine prices rather than bulk purchasing at a discount and in treating children who are unnecessarily ill from preventable diseases because of state-created barriers to delivery of vaccines.

In the long run, the nation must move towards a system that guarantees every child immunizations, regardless of family income or insurance status. All the necessary vaccines could be purchased by the CDC and distributed free of charge to all health care providers in the country. Considering that more than a quarter of all vaccines are paid for by the federal government and another quarter is purchased by states, creating a universal vaccine program is a logical next step towards eliminating preventable disease.

INTRODUCTION

The United States health care system is filled with ironies, not the least of which is the failure of the world's most expensive health system to deliver basic preventive care to its children. Health expenditures exceed 12 percent of the nation's gross national product. The U.S. spends more on personal health care per capita than any other nation and is the world's leader in advanced medical technology. At the same time our infant mortality rate lags behind 19 other nations, including Hong Kong, Spain, and Singapore. And the U.S. falls behind 16 other nations in the proportion of infants immunized against polio, including Bulgaria and Chile (Table 1). When the proportion of U.S. nonwhite infants adequately immunized is compared to other nations' overall rates, the nation ranks 70th in the world, behind Burundi, Iran, Indonesia, Cuba, Jamaica, and Trinidad and Tobago, among others. U.S. preschool immunization rates, according to all available measures, declined during the 1980s, causing major new outbreaks of preventable childhood diseases.

Problems on such basic indicators as these mark a health care system with fundamental failings. They evidence a need for major changes in how basic health services are delivered. They tell us that the most essential preventive health services are an increasingly remote benefit for a growing share of our child population, to be enjoyed only by those children fortunate enough to live in families with substantial incomes and good health

Table 1. Percentage of One Year-Old Children Fully Immunized Against Polio, 1990

Rank	Nation	Rate	Rank	Nation	Rate
1	Denmark	100	38	Iran	91
2	Bulgaria	99	40	Austria	90
2	Chile	99	40	Dominican Republic	90
2	Czechoslovakia	99	40	Finland	90
2	Hungary	99	40	Malaysia	90
2	North Korea	99	40	Mauritius	90
7	China	98	40	Sri Lanka	90
7	Sweden	98	40	Syria	90
7	Switzerland	98	40	Tunisia	90
10	Greece	97	48	Algeria	89
11	Albania	96	48	Argentina	89
11	Hong Kong	96	50	Philippines	88
11	Mexico	96	50	Uruguay	88
11	Oman	96	52	Egypt	87
11	Pakistan	96	52	Honduras	87
11	Poland	96	52	Jamaica	87
17	Australia	95	52	Trinidad & Tobago	87
17	Belgium	95	52	United Kingdom	87
17	Bhutan	95	52	Vietnam	87
17	Costa Rica	95	58	Burundi	86
17	France	95	58	Nicaragua	86
17	Germany	95	58	Panama	86
17	Romania	95	61	Canada	85
17	United States	95	61	Italy	85
25	Cuba	94	61	Mongolia	85
25	Kuwait	94	61	Singapore	85
25	Netherlands	94	61	United Arab Emirates	85
25	Saudi Arabia	94	66	Morocco	84
29	Brazil	93	66	Norway	84
29	Colombia	93	68	Rwanda	83
29	India	93	68	Sierra Leone	83
29	Israel	93	70	Botswana	82
29	Japan	93	70	Central Africa Rep.	82
34	Jordan	92	70	Lebanon	82
34	Portugal	92	70	Tanzania	82
34	Thailand	92		U.S., Black	82
34	Yugoslavia	92	74	Libya	81
38	Indonesia	91			

SOURCE: UNICEF, State of the World's Children, 1992, except U.S. data which is from the 1985 U.S. Immunization Survey.

insurance.

This special report looks at the role of Medicaid, one of the most important sources of funding for children's health services, in the nation's vaccination crisis. It is based on a national survey of state Medicaid programs conducted during the fall of 1991. That survey finds widespread and significant underpayment for vaccination services by state Medicaid programs. It also finds that a majority of states have failed to take advantage of special federal arrangements that could both reduce their Medicaid (and indeed all families') vaccine costs substantially, while at the same time promoting increased provider participation in childhood vaccination programs, including Medicaid, and promoting higher immunization rates.

In great part as a result of inadequate state Medicaid program vaccination practices, in countless communities throughout the country there are critical shortages of physicians willing to vaccinate Medicaid-eligible children (who now constitute nearly one in four children under age 6 in the United States). At the same time, publicly funded providers of pediatric health care, such as community and migrant health centers and local health department clinics, are overwhelmed by unimmunized children and lack the supplies, staff, or the financial resources (through Medicaid or other programs) to accommodate the growing demand for their services. They are neither equipped nor financed to address a total breakdown of the private vaccination system.

Worst of all, this lethal chain of events is not well

understood, perhaps because it has proven easier for some officials to blame low income parents for neglecting their children than to address a breakdown in national and state vaccination programs that pose ever-higher barriers to care. Indeed, this study shows that Maryland, a state which in recent weeks has proposed measures conditioning AFDC payments on proof of childhood vaccination status, pays Medicaid childhood immunization fees far below the levels necessary to assure either that enough private providers are immunizing children in the Medicaid program or that there is sufficient support for public vaccination services.

The answer to these problems lies in the development at the state level, and ultimately at the national level, of a universal vaccine program that assures a steady supply of vaccines to all health providers, pays physicians and clinics reasonably for the immunization delivery services they provide, eliminates financial barriers to vaccination for families, and develops sources of primary health services in communities with shortages.

Such steps are well within our grasp, and they would benefit all children. At a time when a single measles shot in a physician's office can cost $50, vaccination reforms are not only vital for poor, Medicaid-enrolled children. Today 25 million children -- 40 percent of all children -- have no employer health insurance. Tens of millions of others from poor, moderate, and middle income families will experience intermittent spells without insurance coverage or have insurance that does not cover the cost of immunizations. For working families with moderate incomes,

Table 2. Percentage of Infants and Toddlers Who Were Fully Immunized[1], by Age and Race, U.S.[2], 1980 and 1985

Infants		Polio	DTP[3]	Measles	Mumps	Rubella
Total	1980	80.0%	84.2%			
	1985	79.6	82.7	These vaccines are not recommended for		
White	1980	80.9	84.9	children of this age.		
	1985	81.5	84.4			
Nonwhite	1980	73.2	79.0			
	1985	58.5	64.8			
Age one		Polio	DTP	Measles	Mumps	Rubella
Total	1980	95.5%	76.2%			
	1985	95.2	78.3	These vaccines are not recommended for		
White	1980	96.2	78.6	children of this age.		
	1985	96.9	80.1			
Nonwhite	1980	89.1	56.5			
	1985	82.3	64.9			
Age two		Polio	DTP	Measles	Rubella	Mumps
Total	1980	80.7%	87.0%	83.0%	83.2%	80.2%
	1985	76.7	85.8	81.7	77.3	78.9
White	1980	83.0	89.4	84.8	84.4	81.5%
	1985	79.5	88.0	82.7	78.6	80.8
Nonwhite	1980	62.8	68.0	69.0	73.4	70.7
	1985	56.5	69.1	74.7	66.9	64.2

[1] Dosage levels are approximations of level needed to fully immunize a child of a given age: younger than age one, one or more doses of polio and DTP; at age one, one or more doses of polio and three or more doses of DTP; and at age two, three or more doses of polio and DTP and one dose of measles, rubella, and mumps vaccines.

[2] Data are from the U.S. Immunization Survey sample confirmed by parent consultation with an immunization record.

[3] DTP stands for a combined dose of diphtheria, tetanus, and pertussis vaccines.

SOURCE: U.S. Immunization Survey, Centers for Disease Control.

whose children are most vulnerable to the loss of insurance or limited insurance, yet too "well off" for Medicaid, the vaccination crisis is not Medicaid's problem alone. Only a system that makes immunizations a basic guarantee for all children will repair this problem.

THE GROWING CHILDHOOD VACCINATION CRISIS IN THE UNITED STATES

Over the past decade, the proportion of U.S. infants and toddlers adequately immunized against preventable childhood disease has fallen, and the incidence of preventable disease has risen enormously. Between 1980 and 1985 the proportion of children at age two who were fully immunized against seven major childhood illnesses declined (Table 2), with rates as low as 50 percent or fewer of all children adequately immunized in some major American cities, according to the national Centers for Disease Control. The Reagan Administration ceased the collection of nationwide immunization rates, but numerous neighborhood, city, and state studies in the late 1980s and 1990 showed continuing erosion of immunization levels among preschoolers, especially minority and inner city children.

Inadequate immunization rates inevitably led to a soaring incidence of preventable childhood diseases. In 1979, the U.S. Surgeon General set a goal of no more than 500 cases of measles nationally in 1990. In 1983 the nation was down to fewer

Table 3. Cases of Selected Preventable Childhood Diseases

Disease	Public Health Service Year 2000 Objective	Lowest Number of Cases (Year)	Number of Cases in 1991[1]
Measles	0	1,497 (1983)	9,378
Mumps	500	2,982 (1985)	3,822
Rubella	0	225 (1988)	1,344
Pertussis	1,000	1,248 (1981)	2,441

[1] Reported cases through Dec. 7, 1991.

SOURCE: Centers for Disease Control.

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than 1500 measles cases, but by 1990 the number surpassed 27,000 and 89 died. In 1991, the number of measles cases dipped significantly, but experts warn that the three-year long measles epidemic (which claimed over 55,000 cases before beginning to abate in part because so many children were exposed) will strike again soon. Like all cyclical epidemics of preventable disease, measles will not go away unless aggressive action is taken to raise immunization rates substantially.

Similarly, other preventable childhood diseases have risen again to unacceptably high levels (Table 3). More than twice as many children suffered pertussis in 1991 than in 1981 and rubella cases were five times higher last year than in 1988. The number of mumps cases also remained at levels over 25 percent higher than in 1985.

Letting immunization rates drop and disease rates climb is a particularly self-destructive act for a nation. It not only causes

Table 4. Catalog Prices for Selected Vaccines, Per Dose, 1977-1991.

Year	Diphtheria, Tetanus & Pertussis (DTP)	Oral Polio Vaccine (OPV)	Measles, Mumps & Rubella (MMR)
1981	$0.33	$2.10	$9.32
1982	$0.37	$2.75	$10.44
1983	$0.45	$5.56	$11.30
1984	$0.99	$4.60	$12.08
1985	$2.80	$6.15	$13.53
1986	$11.40	$8.67	$15.15
1987	$8.92	$8.07	$17.88
1988	$11.03	$8.07	$24.11
1989	$10.65	$9.45	$24.11
1990	$10.65	$9.45	$24.07
1991	$9.97	$9.45	$25.29
Increase 1981-91	2,921%	350%	171%

SOURCE: Centers for Disease Control.

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greatly increased childhood death, disability, and suffering, but it is very expensive. Studies show that every $1 the U.S. has invested in immunization in recent decades has saved $10 in hospital and other costs.

Several key factors are causing this totally avoidable crisis:

Skyrocketing vaccine costs: Between 1981 and 1991 the price of vaccines skyrocketed (Table 4). The cost of a dose of DTP climbed from $0.33 to $9.97 and polio vaccine increased from $2.10 to $9.45. The price for a single dose of MMR vaccine nearly tripled to $25.29. These soaring prices became harder and harder for economically pressed low and middle income families to pay and wiped out increases in federal funding for childhood vaccine grant

Table 5. Percentage of Children with Employment-Related Insurance, by Income, 1977 and 1987

	1977	1987
All Children	72.8	62.9
Poor Children (a)	27.5	23.0
Low Income Children (b)	63.4	47.0
Middle Income Children (c)	83.6	79.0
Upper Income Children (d)	85.4	86.9

SOURCE: HIES and NMES. Calculations by the Children's Defense Fund.

a. Incomes below federal poverty level.
b. Incomes between 100 to 199 percent of federal poverty level.
c. Incomes between 200 to 399 percent of federal poverty level.
d. Incomes at 400 percent and above of federal poverty level.

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programs designed to help such families.

Widespread childhood poverty. By 1990 13.4 million children (one in five U.S. children) lived in poverty. Among children under age 6, poverty claimed nearly one in four: the number of preschoolers living in poverty rose from 3.4 million in 1979 to 5.4 million in 1990. Poor families typically are unable to pay even for their children's most basic health care needs.

An increasing proportion of children without health insurance. Between 1977 and 1987 the number of children with employer-based health insurance fell by nearly 3 million, with declines as high as 25 percent over this period in the case of low children in families with incomes between 100 and 199 percent of the federal poverty level (Table 5). Most of these families with no health insurance

for their children earned too much money to qualify for Medicaid coverage but were too poor to buy private insurance or pay for medical care out-of-pocket.

The exodus of private physicians from childhood vaccination activities. As families lost insurance, their incomes fell, and vaccine prices skyrocketed, they became less capable of paying rising out-of-pocket prices for vaccination services. Physicians cut back on or simply stopped offering the service and sent even long-time patients to public clinics. In testimony to the Physician Payment Review Commission in 1991, a physician from Pennsylvania reported widespread refusal by that state's pediatricians to furnish immunization services in their offices because of the high price to their patients. These physicians instead referred families to public clinics for services. In a recent study, 84 percent of pediatricians and 66 percent of family physicians reported referring at least some of their pediatric patients to public clinics for immunizations, citing the high cost of vaccines to both the patients and the doctors as the underlying cause.[1]

This would not have been so disruptive if the public clinics had been allocated increasing resources to meet the growing demand. But the growing dependence on public sources of childhood immunizations (and other health care) has not been met by sufficient increases in funding for the public system (Table 6).

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[1] Schulte, JM, et al., "Changing Immunization Referral Patterns Among Pediatricians and Family Practice Physicians, Dallas County, Texas, 1988," Pediatrics 87:204-207

Table 6. Funding for Programs to Immunize Children, 1981 to 1991

	MCH Block Grant	Community Health Centers	Immuniz-ation
1981	$456.7	$323.0	$31.0
1982	373.8	281.2	34.6
1983	373.0	295.0	39.0
1984	398.0	337.0	41.9
1985	478.0	375.0	54.0
1986	457.0	396.0	56.9
1987	478.0	400.0	87.3
1988	526.6	382.9	98.0
1989	554.3	414.8	142.0
1990	553.6	458.9	156.2
1991	587.3	478.2	217.2
Increase 1981-1991	28%	48%	600%

SOURCE: Children's Defense Fund.

Indeed, over the past decade, appropriations for public providers such as community and migrant health centers and child health clinics operated by local health agencies have declined significantly in real dollar terms. Between 1981 and 1991 federal funding for the community health centers program fell by 38 percent in constant 1981 dollars, while federal funding through the Title V Maternal and Child Health Services Block Grant for state health agencies services fell by 34 percent. A 1991 study by CDF of childhood immunization services at community health centers found that declining resources, the high cost of vaccines, the dramatic upsurge in demand from patients shifted from private providers, and the shortage of vaccines for health centers from the Public Health Service significantly impaired the vaccine capability of centers.

Table 7. Health Insurance Coverage Status of All Children Younger than 18, by Race/Ethnicity, 1990

	Total	Covered by Public or Private Insurance	Covered by Any Private Insurance	Covered by Employer-Based Insurance	Covered by Medicaid	Uninsured Throughout the Year
All Races						
Number	65,049	56,634	46,369	39,964	11,993	8,414
Percentage		87.1%	71.3%	61.4%	18.4%	12.9%
White						
Number	51,929	45,444	39,484	34,356	7,132	6,486
Percentage		87.5%	76.0%	66.2%	13.7%	12.5%
Black						
Number	10,162	8,695	4,954	4,048	4,201	1,467
Percentage		85.6%	48.8%	39.8%	41.3%	14.4%
Latino						
Number	7,457	5,344	3,356	2,893	2,237	2,113
Percentage		71.7%	45.0%	38.8%	30.0%	28.3%

Note: Persons of Latino origin may be of any race.

SOURCE: March 1991 Current Population Survey, Bureau of the Census. Calculations by the Children's Defense Fund.

More than 70 percent of all reporting centers were experiencing vaccine shortages at the height of the measles epidemic and were without the resources to secure sufficient doses at the private purchase price.

Another potential safety valve as other immunization resources failed should have been Medicaid. In 1990 Medicaid was the primary or sole form of health insurance for 12 million children (Table 7), including 5.3 million children under age 6 -- nearly one-quarter of all young children. Virtually all children under age 6 with family incomes below 133 percent of the federal

poverty level are entitled to Medicaid as a result of major program expansions which occurred in the late 1980s. Unlike most private health insurers, Medicaid (through its special child health component known as Early and Periodic Screening, Diagnosis, and Treatment, or EPSDT) covers all medically necessary childhood immunizations. Therefore, virtually all young children who are poor should now be able to gain access to childhood immunizations through Medicaid.

If Medicaid provided sufficient access to private providers or adequate reimbursement to public providers, that would relieve many of the key supply and resource pressure points in the rest of the system and assure immunization of poor infants, toddlers, and preschoolers. Yet a series of official investigations of the measles outbreaks in large urban areas (where the proportion of Medicaid enrolled children is especially high) point to high numbers of inadequately immunized Medicaid children. In a study of measles outbreaks in Dallas, Milwaukee, Chicago, Los Angeles and New York City, the Centers for Disease Control found that between 40 and 91 percent of preschoolers who contracted the disease received some form of federal assistance. In Milwaukee at least 86 percent of the preschool measles cases occurred among children entitled to Medicaid. Similarly, 60 percent of the cases in Los Angeles, 75 percent of the cases in New York, and 22 percent of the cases in Dallas occurred among children entitled

to Medicaid benefits.[2]

These studies show that despite its theoretical guarantee of coverage, Medicaid in practice does not adequately assure access to vaccination services. Explanations of Medicaid's poor performance have included: very low rates of private provider acceptance of Medicaid patients (all of the cities studied by the CDC also suffer severe shortages of health care personnel for poor and minority residents)[3]; inadequate support from Medicaid and other sources of funding for private and public providers furnishing vaccination services in inner cities; and the failure of heavily Medicaid-financed health maintenance organizations and other managed care plans located in these areas and enrolling Medicaid-eligible women and children to do an adequate job of immunizing children.

The survey set out to determine whether depressed levels of financial support from Medicaid for childhood immunization services could be underlying each of these causes. The Medicaid program has long been cited for its failure to pay adequately for physician and hospital services. Expert bodies such as the Congressionally established Physician Payment Review Commission (PPRC) have pointed to depressed reimbursement as a major factor

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[2] National Vaccine Advisory Committee, The Measles Epidemic: Problems, Barriers and Recommendations (U.S. Public Health Service, January, 1991)

[3] Indeed, the exceedingly long waits for child health services at the clinics and hospitals serving these neighborhoods belie the notion that families have somehow lost interest in securing health care for their children.

in low provider participation in the program in general.

In 1990, the federal Medicaid law was amended to require states to set reasonable Medicaid payment levels for services furnished by obstetrical and pediatric providers.[4] No study, however, has been conducted which specifically examines how Medicaid pays for childhood immunization services and whether payment levels are reasonable. For that reason, CDF, with support from the Robert Wood Johnson Foundation, undertook this study in the fall of 1991.

CDF contacted Medicaid agencies in 49 states and the District of Columbia and examined state agency manuals and documents pertaining to coverage of immunization services for children.[5] Written state responses to a pre-tested survey instrument were followed up with telephone interviews in any cases in which responses were unclear. Information was sought regarding both the types of vaccines covered and agencies' schedules of timing or periodicity of immunizations as well as state payment levels for vaccines and their administration. 48 states and the District of Columbia responded to our survey.

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[4] This new reasonable payment requirement does not specifically refer to immunization services furnished by these providers, although such services are normally furnished as an incident to a physician office visit. To date, the Health Care Financing Administration (the federal agency which administers Medicaid) has found numerous states out of compliance with these new payment requirements, but seems to be making no findings regarding immunization payment practices.

[5] Arizona was not included in the survey because nearly all Medicaid beneficiaries in the state are enrolled in managed care programs and vaccination costs cannot be broken out.

FINDINGS OF THE STUDY: STATE MEDICAID REIMBURSEMENT FOR VACCINATION SERVICES IS INADEQUATE TO PROVIDE IMMUNIZATIONS TO CHILDREN, AND CONTRIBUTES BOTH TO LOW IMMUNIZATION RATES AND THE RISING BURDEN ON INADEQUATE PUBLIC HEALTH RESOURCES

Coverage and frequency of vaccines and immunization services: Every state covers all the vaccines routinely recommended at the time of the survey -- measles, mumps, and rubella (MMR), diphtheria, tetanus, and pertussis (DTP), oral polio vaccine (OPV), and haemophilus influenza B (HiB). State Medicaid immunization schedules also conformed to recommended standards of practice.

Since the survey was conducted, the Immunization Practices Advisory Committee to the CDC recommended that all children receive vaccination against hepatitis B. The FDA also licensed a new acellular pertussis antigen to be used in the third and fourth dose of the DTP series. Though the two recommendations have been anticipated for over a year, only a few state Medicaid programs reported knowing that such changes were forthcoming. Every state Medicaid program must revise its immunization coverage to conform to the new recommendations.

Payment for vaccination services: While states in theory cover adequate immunization services, compelling evidence of inadequate payment for such services came from the survey, explaining why the theoretical coverage often did not translate to access.

In assessing the adequacy of state payment levels for

vaccination services, two separate factors must be considered. The first is the level of reimbursement for the vaccine itself -- in effect, the cost of the antigen. The second is the level of reimbursement for the actual administration of the vaccine by the provider. This includes the provider's time to recall and remind families for immunizations, to administer the vaccines, and to inform families regarding possible adverse effects, as well as the cost of the supplies(e.g., syringes, cotton balls, and bandages) needed to administer the vaccine. The tables reflect state reimbursement levels for both vaccine purchase and administration costs.

In paying for these vaccination services, state Medicaid programs can take several different approaches. The first is to participate in a statewide system under which all vaccines are distributed or made available free of charge to all physicians and clinics and other pediatric providers serving children regardless of insurance status. Under this system, parents or public or private health insurers would pay directly only for the cost of administration. A version of the system, which we term a universal distribution system, is used in 13 states (Alaska, Connecticut, Hawaii, Kentucky, Maine, Massachusetts, Michigan, Minnesota, New Hampshire, Rhode Island, Vermont, Washington, and Wyoming) for at least one type of vaccine. Several states with universal vaccine distribution systems have insufficient resources to assure year-round availability of all the routinely used vaccines.

Under a universal system, a state health department purchases supplies of vaccine directly from the manufacturers at a special discounted price (known as the "contract price"). (In one case, the state manufactures a vaccine.) The contract prices are those negotiated by the federal Centers for Disease Control with vaccine manufacturers under the federal immunization grants program (which supplies approximately 25 percent of all doses of childhood vaccines furnished in the U.S.). State health agencies wishing to do so are permitted under the federal CDC contract to purchase additional doses of vaccine (over and above vaccine allocations received from CDC) directly from manufacturers at the contract price.

A universal distribution system assures lower cost vaccine for all families in a state, since the federal contract price for vaccines is far less than the lowest prices available private providers (Table 8). The private purchase prices are known as the "catalog" prices. They reflect the cost of purchasing vaccines in small quantities directly from manufacturers at unnegotiated prices. Oftentimes, physicians rely on intermediary pharmaceutical distributors and pay even higher costs.

A second approach is for the Medicaid agency to arrange with the health department to purchase vaccines at the federal contract price and to distribute the vaccine to Medicaid providers. Providers administer immunizations to Medicaid

Table 8. Federal Vaccine Price Discount, 1991

Vaccine	Private Catalog Price	Federal Contract Price	Savings Per Dose	Percentage Discount
OPV	$9.45	$2.0014	$7.45	79%
DTP	$9.97	$6.245	$3.73	37%
MMR	$25.29	$15.329	$9.96	39%
HiB (Lederle)	$14.55	$5.16	$9.39	65%

SOURCE: Centers for Disease Control.

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patients and receive vaccines to replace the quantities used to immunize Medicaid-covered children rather than monetary reimbursement. We term this system a vaccine replacement system. Eight states (Illinois, Kansas, Michigan, Mississippi, Nevada, Ohio, South Carolina, and Texas) offer Medicaid vaccine replacement rather than financial reimbursement to providers. It has some of the cost containment benefits of the universal system since the Medicaid agency pays lower prices for the vaccines needed for Medicaid-covered children. There are two drawbacks. First, Medicaid vaccine replacement systems do not leverage lower vaccine costs for all children regardless of their income or insurance status. Second, vaccine replacement requires providers to lay out the initial funds for the vaccines and then wait for replacement supplies from the health department paid for by the Medicaid agency. Given the relatively high price of vaccines and the frequently long delays between provider expenditures and Medicaid vaccine replacement, providers may view these "carrying costs" as a reason not to furnish vaccines to some or all Medicaid patients. However, the vaccine replacement system does

assure that Medicaid programs pay the lowest possible price for vaccines to immunize Medicaid-covered children.

A third approach to paying for immunization services is reimbursement to providers in the traditional fee-for-service approach. This is the most costly system for a state to operate and has the biggest impediments to provider participation, so all parties lose out. Under reimbursement systems, providers are left to secure vaccines at private retail prices, with no discounted acquisition or supply arrangements developed by the Medicaid agency. Providers then bill Medicaid for the vaccination services they furnish and wait weeks (or even months) to be paid for their services. These providers experience the greatest immunization carrying costs, and the Medicaid agencies in these states would pay the highest prices for vaccinations.

Despite the cost of this approach and the disincentives to provider participation in Medicaid vaccine programs which this reimbursement system undoubtedly creates, only 20 states use either a universal distribution or Medicaid replacement system for one or more vaccines[6] (Table 9).

The fee-for-service approach would in theory require states to pay two to three times more per vaccine dose than do the distribution systems, plus the normal costs of office visits and

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[6] Even in those states with a cost efficient vaccine distribution program, reimbursement rates are important, since vaccines distributed at no charge frequently run out because of state funding shortfalls and providers must rely on fee-for-service reimbursements when they immunize Medicaid patients. States that use a fee-for-service backup for their distribution systems are included in Tables 10-12.

Table 9. State Vaccine Payment Systems

State	Vaccine Payment System
Alabama	Fee-for-service
Alaska	Universal
Arkansas	Fee-for-service
California	Fee-for-service
Colorado	Fee-for-service
Connecticut	Universal
D.C.	Fee-for-service
Delaware	Fee-for-service
Florida	Fee-for-service
Georgia	Fee-for-service
Hawaii	Universal
Idaho	Fee-for-service
Illinois	Vaccine Replacement
Indiana	Fee-for-service
Iowa	Fee-for-service
Kansas	Vaccine Replacement
Kentucky	Universal
Louisiana	Fee-for-service
Maine	Universal
Maryland	Fee-for-service
Massachusetts	Universal
Michigan	Vaccine replacement/Universal for DTP
Minnesota	Universal
Mississippi	Vaccine Replacement
Missouri	Fee-for-service
Montana	Fee-for-service
Nebraska	Fee-for-service
Nevada	Vaccine Replacement
New Hampshire	Universal
New Jersey	Fee-for-service
New Mexico	Fee-for-service
New York	Fee-for-service
North Carolina	Fee-for-service
North Dakota	Fee-for-service
Ohio	Vaccine Replacement
Oklahoma	Fee-for-service
Oregon	Fee-for-service
Pennsylvania	Fee-for-service
Rhode Island	Universal
South Carolina	Vaccine Replacement
South Dakota	Fee-for-service
Tennessee	Fee-for-service
Texas	Vaccine Replacement
Utah	Fee-for-service
Vermont	Universal
Virginia	Fee-for-service
Washington	Universal
West Virginia	Fee-for-service
Wisconsin	Fee-for-service
Wyoming	Universal

NOTE: States with universal vaccine programs may distribute only limited supplies of vaccine to private physicians.

SOURCE: Children's Defense Fund.

administration. Unfortunately, if unsurprisingly, the fee-for-service states have responded to the high and rising immunization costs they are imposing on themselves through these systems by limiting reimbursement to levels that are so low they interfere with the delivery of immunizations.

In virtually every state that uses a fee-for-service system of vaccine payment, the 1991 Medicaid reimbursement rate was well below the usual, customary, and reasonable (UCR) price of immunizing children. The UCR charge reflects the typical charge billed by private physicians for a service on a fee-for-service basis.[7] Table 10 compares each state's total Medicaid reimbursement rate (vaccines plus administration fees) to the usual, customary, and reasonable (UCR) fee for 4 different vaccines -- $44 for measles, mumps, and rubella (MMR); $22 for oral polio vaccine (OPV); $34 for diphtheria, pertussis and tetanus (DTP); and $25 for haemophilus influenza B (HiB).

Not a single state paid the UCR for all vaccines, and only one state (Oregon) paid 85% or better of the UCR for each of the vaccines. The average DTP payment was just 53 percent of the UCR charged by private physicians. Twenty-seven states paid less than 60 percent of UCR charges for diphtheria, tetanus and pertussis vaccination. Oral polio vaccine and measles, mumps, and rubella immunizations were reimbursed an average of 67 and 72 percent of UCR fees, respectively. Twelve states reimbursed for

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[7]Actuarial Research Corporation. Premiums for Preventive Pediatric Care Recommended by the American Academy of Pediatrics. February 1991.

Table 10. Medicaid Vaccine Payments, 1991

	Reimbursement for Vaccine and Administration				Reimbursement as a Percentage of UCR Fee			
	DTP	OPV	MMR	HiB	DTP	OPV	MMR	HiB
Alabama	$16.84	$17.64	$36.61	$12.53	50%	80%	83%	50%
Alaska	--	--	--	--	--	--	--	--
Arkansas	$18.00	$16.20	$34.64	$20.00	53%	74%	79%	80%
California	$16.78	$16.50	$28.61	$19.07	49%	75%	65%	76%
Colorado	$17.90	$20.19	$33.35	$20.11	53%	92%	76%	80%
Connecticut	--	--	--	$20.00	--	--	--	80%
D.C.	$23.02	$17.56	$34.91	$35.37	68%	80%	79%	141%
Delaware	$10.25	$10.80	$27.25	$15.25	30%	49%	62%	61%
Florida	$15.03	$10.81	$31.14	$16.50	44%	49%	71%	66%
Georgia	$10.83	$10.84	$24.30	$14.10	32%	49%	55%	56%
Hawaii	$10.08	$10.48	$18.74	$17.19	30%	48%	43%	69%
Idaho	$19.00	$17.00	$33.00	$20.43	56%	77%	75%	82%
Illinois	--	--	--	--	--	--	--	--
Indiana	$16.00	$14.93	$33.03	$22.90	47%	68%	75%	92%
Iowa	$24.33	$16.21	$34.52	$22.42	72%	74%	78%	90%
Kansas	--	--	--	--	--	--	--	--
Kentucky	$8.99	$2.26	$17.32	$5.83	26%	10%	39%	23%
Louisiana	$18.00	$18.00	$35.00	$22.00	53%	82%	80%	88%
Maine	--	--	--	--	--	--	--	--
Maryland	$15.70	$11.04	$29.59	$17.00	46%	50%	67%	68%
Massachusetts	--	--	--	--	--	--	--	--
Michigan	--	--	--	$22.20	--	--	--	89%
Minnesota	$13.29	$13.47	$30.77	$18.94	39%	61%	70%	76%
Mississippi	--	--	--	--	--	--	--	--
Missouri	$24.00	$16.65	$36.75	$23.50	71%	76%	84%	94%
Montana	$17.72	$17.31	$29.60	$18.40	52%	79%	67%	74%
Nebraska	$20.21	$21.01	$23.21	$28.36	59%	96%	53%	113%
Nevada	$11.13	$11.13	$11.13	$11.13	33%	51%	25%	45%
New Hampshire	$17.00	$11.00	$33.00	$17.00	50%	50%	75%	68%
New Jersey	$16.34	$14.44	$39.87	$25.79	48%	66%	91%	103%
New Mexico	$20.00	$15.00	$36.00	$47.98	59%	68%	82%	192%
New York	$13.84	$15.28	$37.75	$22.00	41%	69%	86%	88%
North Carolina	$20.14	$19.71	$41.24	$34.09	59%	90%	94%	136%
North Dakota	$31.50	$12.95	$32.50	$25.50	93%	59%	74%	102%
Ohio	--	--	--	$20.62	--	--	--	82%
Oklahoma	$16.00	$5.18	$32.00	$17.90	47%	24%	73%	72%
Oregon	$28.81	$24.87	$39.07	$30.33	85%	113%	89%	121%
Rhode Island	--	--	--	--	--	--	--	--
South Carolina	--	--	--	--	--	--	--	--
South Dakota	$18.09	$17.02	$39.03	$12.50	53%	77%	89%	50%
Tennessee	$20.45	$14.60	$36.95	$24.00	60%	66%	84%	96%
Texas	--	--	--	--	--	--	--	--
Utah	$21.72	$19.19	$37.12	$21.40	64%	87%	84%	86%
Vermont	--	--	--	--	--	--	--	--
Virginia	$17.91	$11.72	$29.97	$18.45	53%	53%	68%	74%
Washington	--	--	--	--	--	--	--	--
West Virginia	$15.00	$10.00	$25.00	$13.80	44%	45%	57%	55%
Wisconsin	$22.30	$17.61	$36.44	$24.85	66%	80%	83%	99%
Wyoming	--	--	--	--	--	--	--	--
Average	$17.92	$14.75	$31.84	$21.08	53%	67%	72%	84%

NOTE: A "--" indicates that all the vaccines used for Medicaid patients are bulk purchased.

oral polio vaccine at severely depressed levels, less than 60 percent of UCR, and 6 states paid less than 60 percent of UCR charges for measles, mumps, rubella vaccine. HiB payments were the highest, averaging 84 percent of UCR charges, yet six states paid severely depressed rates.

States showed a wide variation in reimbursements for individual vaccines plus administration fees. For example, diphtheria, tetanus, rubella vaccine (DTP) reimbursements ranged from $8.99 in Kentucky to $31.50 in North Dakota. Oral polio vaccine (OPV) payments varied from $2.26 in Kentucky and $5.18 in Oklahoma to $24.87 in Oregon. Nevada pays just $11.13 for MMR vaccine, while North Carolina pays $41.27. HiB vaccine payments showed the greatest variations, from $5.83 in Kentucky to $47.98 in New Mexico.

Several states actually reimburse physicians for immunization services at a rate less than the cost of the vaccine alone. Kentucky's reimbursements for each of the four routine vaccines fell below the catalog price. Nevada and West Virginia set reimbursements for measles, mumps, and rubella (MMR) and meningitis (HiB) vaccines below cost. Georgia, Hawaii and Nebraska pay less than the cost of vaccine for measles, mumps, and rubella immunizations. Similarly, South Dakota has Medicaid vaccination fees set below the cost of vaccine for HiB. And Oklahoma pays below the catalog price for polio vaccine.

The adequacy of payments also varied between antigens within states. For example, New Mexico pays less than 60 percent of the

Table 11. EPSDT Exams and Immunization Followup Visit Payments

State	EPSDT Exam Fee	Pays for Immunization Followup
Alabama	$35	No
Alaska	N/A	Yes
Arkansas	35	No
California	50	No
Colorado	38	Yes
Connecticut	23	Yes
D.C.	30	Yes
Delaware	N/A	No
Florida	30	Yes
Georgia	38	Yes
Hawaii	N/A	Yes
Idaho	39	Yes
Illinois	30	Yes
Indiana	20	Yes
Iowa	22	Yes
Kansas	37	Yes
Kentucky	12	No
Louisiana	65	Yes
Maine	35	Yes
Maryland	49	No
Massachusetts	45	Yes
Michigan	53	No
Minnesota	87	Yes
Mississippi	N/A	Yes
Missouri	28	No
Montana	38	No
Nebraska	45	No
Nevada	50	No
New Hampshire	25	No
New Jersey	23	Yes
New Mexico	38	Yes
New York	29	Yes
North Carolina	45	No
North Dakota	N/A	No
Ohio	31	Yes
Oklahoma	25	No
Oregon	26	Yes
Pennsylvania	34	Yes
Rhode Island	20	Yes
South Carolina	35	Yes
South Dakota	25	Yes
Tennessee	34	No
Texas	27	Yes
Utah	29	Yes
Vermont	25	Yes
Virginia	19	Yes
Washington	N/A	Yes
West Virginia	22	No
Wisconsin	29	Yes
Wyoming	35	Yes

SOURCE: EPSDT fees are from MCManus M., Flint S. and Kelly R. "The Adequacy of Physicians Reimbursement for Pediatric Care Under Medicaid." Pediatrics. 87:909. "N/A" indicates that data were not available.

usual and customary fee for diphtheria, tetanus, and pertussis (DTP) vaccine, but nearly double the UCR charge for HiB vaccine. Similarly, Nebraska pays over 90 percent of the UCR for polio and HiB vaccines, but less than 60 percent of UCR fees for diphtheria, tetanus, and pertussis (DTP) and measles, mumps, and rubella (MMR) vaccines.

One explanation for low vaccine reimbursement levels is the infrequent review of payments by state Medicaid agencies. Few states have a system to review the adequacy of payments on a regular basis. Consequently, payments fall behind increased provider costs and become less and less sufficient over time. This is evidenced by the comparatively higher payments for the relatively new HiB vaccine compared to the long-used OPV and DTP vaccines.

Another explanation is that state budgets are under considerable pressure, so states often cut corners -- and cut them deeply -- on provider reimbursements in Medicaid. In the immunization system, however, this is doubly self-defeating. First, immunizations are incredibly cost-effective for Medicaid programs and the health care system as a whole. Creating barriers to vaccination imposes very large long-term costs on the state and private insurers. Second, states that pay insufficient reimbursement for vaccination services in a fee-for-service model still are paying far more than they would if they distributed lower-cost bulk purchased vaccines and increased payment for administration costs to encourage delivery of the vaccines.

In addition to the problem of inadequate reimbursement for immunization is the problem of inadequate reimbursement for followup immunization visits. Frequently immunizations may be contraindicated during an office visit. For example, a child might be sick on the day when she is examined by a physician and found to need a vaccination. Or the child may not have the temperament to receive three or four vaccinations at a single visit. Table 11 sets forth both states' Medicaid payment for basic well-child visits, as well as state payment policies for follow up visits to complete a child's vaccinations.

Not only are comprehensive well-child visits under EPSDT reimbursed too low to begin with, but 17 states do not allow providers to bill a minimal office visit charge (generally less than $15) when a second visit must be scheduled to complete a child's immunization series. These 17 states assume that providers will absorb the followup costs to recall a child for an immunization-only visit within the depressed EPSDT visit fee. In reality, it is as likely that a private physician will simply refer these children to a public clinic rather than bear the uncompensated cost of rescheduling a second office visit.

Table 12 graphically displays the Medicaid shortfall for a 15-month-old's typical vaccination series. At age 15 months all children should receive doses of DTP, MMR, HiB, and OPV. The total UCR for these vaccinations would be about $125. In 10 states, total payment would be less than 60 percent of the UCR, with one state underpaying as much as $90.60 for a $125 visit.

Table 12. Reimbursement at 15 Month Visit

	Medicaid Payment	Percent of UCR Charge	Underpayment
Alabama	$73.62	58.9%	$51.38
Alaska	--	--	--
Arkansas	$88.84	71.1%	$36.16
California	$80.96	64.8%	$44.04
Colorado	$91.55	73.2%	$33.45
Connecticut	--	--	--
D.C.	$110.86	88.7%	$14.14
Delaware	$63.55	50.8%	$61.45
Florida	$73.48	58.8%	$51.52
Georgia	$60.07	48.1%	$64.93
Hawaii	$56.49	45.2%	$68.51
Idaho	$89.43	71.5%	$35.57
Illinois	--	--	--
Indiana	$86.86	69.5%	$38.14
Iowa	$97.48	78.0%	$27.52
Kansas	--	--	--
Kentucky	$34.40	27.5%	$90.60
Louisiana	$93.00	74.4%	$32.00
Maine	--	--	--
Maryland	$73.33	58.7%	$51.67
Massachusetts	--	--	--
Michigan	--	--	--
Minnesota	$76.47	61.2%	$48.53
Mississippi	--	--	--
Missouri	$100.90	80.7%	$24.10
Montana	$83.03	66.4%	$41.97
Nebraska	$92.79	74.2%	$32.21
Nevada	$44.52	35.6%	$80.48
New Hampshire	$78.00	62.4%	$47.00
New Jersey	$96.44	77.2%	$28.56
New Mexico	$118.98	95.2%	$6.02
New York	$88.87	71.1%	$36.13
North Carolina	$115.18	92.1%	$9.82
North Dakota	$102.45	82.0%	$22.55
Ohio	--	--	--
Oklahoma	$71.08	56.9%	$53.92
Oregon	$123.08	98.5%	$1.92
Rhode Island	--	--	--
South Carolina	--	--	--
South Dakota	$86.64	69.3%	$38.36
Tennessee	$96.00	76.8%	$29.00
Texas	--	--	--
Utah	$99.43	79.5%	$25.57
Vermont	--	--	--
Virginia	$78.05	62.4%	$46.95
Washington	--	--	--
West Virginia	$63.80	51.0%	$61.20
Wisconsin	$101.20	81.0%	$23.80
Wyoming	--	--	--
Average	$85.60	68.5%	$39.40

NOTE: A "--" indicates that all the vaccines used for Medicaid patients are bulk purchased.

On average, a private physician must accept nearly $40 less to provide needed immunizations to a 15-month-old child enrolled in Medicaid than for a similar privately-insured child.

Moreover, this table may understate the magnitude of the shortfall. Because multiple inoculations are required at age 15 months, many parents or physicians may insist on more than one visit to fully immunize a child. As a result, the shortfall for a particular state shown on Table 12 does not take into account the added burden on providers of the denial of reimbursement by some states for an office visit when the vaccination is provided during a follow-up visit.

The low Medicaid reimbursement rates for immunization services and the absence of followup visit fees lead to serious vaccination access problems.* Combined with generally depressed reimbursements for primary care services, insufficient payment for immunization services may push a pediatric provider out of Medicaid completely. More commonly, the low payment levels lead providers to cease offering immunization services to Medicaid-enrolled children and routinely refer their patients to public

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* These figures also suggest that in states using managed care plans, payment may be particularly depressed. In states that use either capitated or fee-for-service managed care arrangements, capitation payments (all inclusive monthly payments for services) and fee-for-service reimbursement rates are set at less than historic Medicaid reimbursement levels as a cost-savings measure. The data indicate that Medicaid payments for immunization services are already substantially depressed in all states but one. Further cuts in the reimbursement levels for managed care programs increase the likelihood that managed care plans will seek to avoid provision of a relatively expensive pediatric service because they are being poorly reimbursed for it.

immunization clinics. The result is that Medicaid-covered children get pushed into an already overwhelmed public health system that cannot meet their needs and safety net health services deteriorate even further for both Medicaid-eligible and other children. For children, the consequence is that more and more fall through the cracks and fewer and fewer receive protection against preventable disease.

Yet, some policymakers are intent on blaming families and refuse to identify and eliminate these systemic barriers to immunization services. For example, Maryland, which has proposed to reduce AFDC benefits to families who do not manage to immunize their children, pays providers between 46 percent and 68 percent of the UCR for their immunization services and does not reimburse for a follow-up visit at all if immunizations at the first visit are contraindicated. Given the enormous financial barrier to providers immunizing Medicaid-enrolled children in Maryland, it is unlikely such a punitive program is a reasonable approach to improving the immunization status of the state's children.

If the typical state purchased the vaccines at the federal discount price it would save nearly $30 at the 15-month visit. Savings of that magnitude would allow a state to increase vaccine administration fees to $10 per dose for a total of $40 for the 15-month visit and still expend 10 percent less than current immunization expenditures. For example, New York pays providers $13.28 per dose of oral polio vaccine plus $2 per dose for administration of the vaccine for a total of $15.28, just 69

percent of the UCR fee. The low payment represents a significant barrier for private physicians to offer polio immunization to the state's 1 million Medicaid-enrolled children. Yet in the neighboring New England states, vaccines are distributed free of charge to private providers at a cost to the state of only $2 per dose of polio plus administration costs. In essence, New York discourages private physicians from immunizing Medicaid-enrolled children and pays $11 more per dose for the privilege. If New York converted to a vaccine distribution system, its Medicaid program could increase the administration fee paid to providers to $10 per dose, thereby encouraging actual delivery of vaccines, and still save $3 for every dose of polio vaccine administered plus the costs of treating cases of disease prevented by higher immunization levels. When Ohio converted from a fee-for-service approach to a Medicaid vaccine replacement system, it saved $3.3 million in the course of three years.

With vaccine distribution programs and improved immunization administration fees, more providers would participate in Medicaid, and more Medicaid providers would offer immunizations services. With an adequate supply of private Medicaid providers, pressure would be relieved from public clinics and barriers to vaccinations would be removed for millions of children.

CONCLUSION AND RECOMMENDATIONS

Skyrocketing vaccine costs have made the cost of basic immunizations almost prohibitive to middle class families and very expensive to public and private insurers. Yet instead of instituting aggressive, readily available steps to control the price of vaccines, get vaccines to all health providers through a bulk purchase system, and pay reasonable administration fees, most states have elected to simply allow their Medicaid reimbursement rates to fall far behind the cost of immunizing children on a fee-for-service basis. The result is widespread non-participation in Medicaid programs by private physicians, and another flood of children to under-funded public providers, already faced with the diversion of uninsured or privately insured children. The public programs do not have enough free vaccine and when they depend on Medicaid to repay their costs for Medicaid recipients, they too are under-reimbursed. In the end, parents are blamed by leaders who do not understand the problem, because casting blame on poor families almost always is so much easier than fixing systems.

But this system is unusually easy to fix. The ready answer to the problem lies in establishing universal vaccine programs at the state level. Funded through general funds and other special taxes (for example, small taxes levied on all hospitals, physicians, and payments by Medicaid agencies and insurers who otherwise would have to pay higher catalog rates for vaccines), a universal bulk purchase program administered by a state health

department could secure all the vaccines a state needs at the CDC contract price, leaving parents, Medicaid agencies and insurers responsible for a reasonable administration fee only. In many states, the savings from Medicaid alone could account for much of the funding needed to operate a universal vaccine distribution system.

Medicaid savings could also be invested in more reasonable reimbursement rates and increased support to private and public providers for administration of vaccines and, ideally, other primary care services. Insufficient reimbursement levels discourage participation in the Medicaid program, and without a sufficient number of providers willing to serve Medicaid-enrolled children, a Medicaid card becomes practically useless for millions of children.

Because of the enormous cost-effectiveness of immunization services, Congress should encourage states to improve their immunization systems. Medicaid programs should be required to implement vaccine replacement systems, at a minimum. Federal grants for states to start-up vaccine distribution systems could pay for themselves through reduced Medicaid costs. Incentives could include enhancing federal financial participation for Medicaid immunization services to 90 percent to encourage better payments to providers. Another companion approach to assist states and localities would be to expand the CDC's childhood immunization program to provide resources for administering immunizations to children. The current program provides help for

vaccine costs and only limited assistance for the doctors and nurses needed to administer the vaccines. Expanded funding would allow state and local public health programs to develop innovative outreach strategies and more accessible clinic hours and locations.

While a universal vaccine distribution system can be established by any state alone, it is one that should be established for every state and for every family. All the necessary vaccines for American children could be purchased by the Centers for Disease Control and distributed free of charge to all health care providers in the country. Considering that over a quarter of all vaccines are paid for by the federal government and another quarter is purchased by states, creating a universal vaccine program is a logical next step towards eliminating preventable childhood diseases in the nation.

Physicians and clinics could continue to be reimbursed for administration activities by parents and public and private insurance plans (or alternatively, through an additional per-child administration payment made directly by CDC or a state health agency). A universal vaccine initiative should be coupled with resources for doctors and nurses to administer immunizations and other primary health care services and to provide outreach and parent education, especially in medically underserved areas. Such reforms could be instituted, for approximately $500 million more in funding in the first year, with ongoing support coming from the health insurers and providers that will realize major

short term and long term savings from this type of system. In the end the new system would more than pay for itself.

The advantages of a universal vaccine program include better controlled costs and the guarantee that no American child will be denied immunizations because of cost. Coordinated vaccine purchasing and distribution systems are used even in many countries that otherwise maintain an insurance approach to payment for services. These nations recognize that immunizations are such a crucial public health activity and the purchase of the vaccine such a large portion of the cost of the service that the financing and distribution of childhood vaccines cannot be left to normal market forces.

This nation is in the midst of a terrible immunization crisis that cannot and need not wait for a full-blown national health plan before being resolved. Vaccines are incredibly cost-effective, saving between $10 and $14 for every dollar spent. Each day we delay an overhaul of state and national vaccine programs and choose instead to blame and punish parents for events far beyond their control brings us a step closer to the next epidemic, which experts say surely will come. This is a problem that national and state leaders can tackle and beat today, leaving both children, and the national health budget, far better off for their efforts.

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